

CLAIM AMENDMENTS

1. (Previously Presented)

An optical deflection device comprising:

a base member;

a polygon mirror which is formed into a regular polygon and has a reflecting surface on each peripheral end face;

a flange member which holds said polygon mirror and rotates with respect to said base member; and

a press member which presses said polygon mirror against said flange member,

wherein surface roughening is performed for at least one of a holding surface of said flange member which holds said polygon mirror and a held surface of said polygon mirror which is held by the holding surface, and the holding surface and the held surface are bonded with an adhesive,

wherein a surface roughness (R_y) of the holding surface and/or the held surface having undergone surface roughening satisfies a conditional expression:

$$3 \mu\text{m} \leq R_y \leq 20 \mu\text{m}$$

where R_y : maximum height (JIS B0601), and

wherein the adhesive has a Young's modulus of not more than 1700 MPa at 25°C.

2. (Original)

An apparatus according to claim 1, wherein the surface roughening includes abrasive blasting.

3. (Canceled)

4. (Previously Presented)

An apparatus according to claim 1, wherein the adhesive has a Young's modulus of not more than 1,144 MPa at 25°C.

5. (Original)

An apparatus according to claim 1, wherein said polygon mirror is rotated at a rotational speed of not less than 50,000 rpm.

6. (Original)

An image printing apparatus comprising an optical deflection device defined in claim 1.

7. (Original)

An apparatus according to claim 1, wherein said polygon mirror and said flange member are formed from aluminum.

8. (Previously Presented)

An optical deflection device manufacturing method comprising the steps of:

integrally fitting a flange member on a bearing;

performing flat work for a holding surface of the flange member arranged to hold a polygon mirror having a plurality of reflecting surfaces so as to become a surface perpendicular to an axis of rotation of the bearing;

performing surface roughening for the holding surface of the flange member;

applying an adhesive between the holding surface of the flange member and a held surface of the polygon mirror held by the holding surface; and

mounting a press member which presses and biases the polygon mirror against the flange member, wherein a surface roughness (R_y) of the holding surface having undergone surface roughening satisfies a conditional expression:

$$3 \mu\text{m} \leq R_y \leq 20 \mu\text{m}$$

where R_y : maximum height (JIS B0601), and

wherein the adhesive has a Young's modulus of not more than 1700 MPa at 25°C.

9. (Original)

A method according to claim 8, wherein the surface roughening includes abrasive blasting.

10. (Canceled)

11. (Previously Presented)

A method according to claim 8, wherein the adhesive has a Young's modulus of not more than 1,144 MPa at 25°C.

12. (Original)

A method according to claim 8, wherein the polygon mirror is rotated at a rotational speed of not less than 50,000 rpm.

13. (New)

An optical deflection device manufacturing method comprising the steps of:

integrally fitting a flange member on a bearing;

performing flat work for a holding surface of the flange member arranged to hold a polygon mirror on a held surface of the polygon mirror, the polygon mirror having a plurality of reflecting surfaces so as to become a surface perpendicular to an axis of rotation of the bearing;

performing surface roughening for the held surface of the polygon mirror;

applying an adhesive between the holding surface of the flange member and the held surface of the polygon mirror held by the holding surface; and

mounting a press member which presses and biases the polygon mirror against the flange member, wherein a surface roughness (R_y) of the held surface having undergone surface roughening satisfies a conditional expression:

$$3 \mu\text{m} \leq R_y \leq 20 \mu\text{m}$$

where R_y : maximum height (JIS B0601), and

wherein the adhesive has a Young's modulus of not more than 1700 MPa at 25°C.

14. (New)

A method according to Claim 13, wherein the surface roughening includes abrasive blasting.

15. (New)

A method according to claim 13, wherein the adhesive has a Young's modulus of not more than 1,144 MPa at 25°C.

16. (New)

A method according to claim 13, wherein the polygon mirror is rotated at a rotational speed of not less than 50,000 rpm.